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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/862,827	05/22/2001	Jack A. Mandelman	FIS920000224US2(13814A)	9621

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EXAMINER

LEWIS, MONICA

ART UNIT	PAPER NUMBER
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2822

DATE MAILED: 01/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/862,827

Applicant(s)

MANDELMAN ET AL.

Examiner

Monica Lewis

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 53-59 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 53-56 is/are allowed.
- 6) ☒ Claim(s) 57-59 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No() _____
- 5) ☐ Notice of Informal Patent Application (PTO-892)
- 6) ☐ Other: _____

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DETAILED ACTION

1. This office action is in response to the response filed October 20, 2003.

Specification

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 57-59 are rejected under 35 U.S.C. 103(a) as obvious over Schrems et al. (U.S. Patent No. 5,945,704) in view of Gambino (U.S. Patent No. 6,174,756) and Bronner et al. (U.S. Patent No. 5,525,531).

In regards to claim 57, Schrems discloses the following:

- a) at least one array region having at least one wordline (120) formed therein (For Example: See Figure 1 and Column 3 Lines 28-43); and
- b) an isolation region (180) (For Example: See Figure 1 and Column 3 Lines 28-43).

In regards to claim 57, Schrems fails to disclose the following:

- a) one support region having a local interconnect formed therein.

However, Gambino discloses a support region (110) with an interconnect (For Example: See Figure 1A). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor device of Schrems to include a support region with an interconnect as disclosed in Gambino because it aids in providing an efficient formation of an integrated circuit (For Example: See Column 1 Lines 65 and 66 and Column 2 Lines 1-11).

Additionally, since Schrems and Gambino are both from the same field of endeavor, the purpose disclosed by Gambino would have been recognized in the pertinent art of Schrems.

b) at least one wordline and said local interconnect are comprised of identical material.

However, Bronner et al. ("Bronner") discloses a wordlines and interconnects made of the same material (For Example: See Column 3 Lines 44-67). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor device of Schrems to include wordlines and interconnects made of the same material as disclosed in Bronner because it aids in providing low capacitance (For Example: See Column 1 Lines 5-18).

Additionally, since Schrems and Bronner are both from the same field of endeavor, the purpose disclosed by Bronner would have been recognized in the pertinent art of Schrems.

In regards to claim 58, Schrems discloses the following:

a) array region includes a plurality of DRAM cells embedded in a semiconductor substrate (For Example: See Figure 1 and Column 3 Lines 28-30).

In regards to claim 59, Schrems discloses the following:

a) each of said DRAM cells are vertical DRAMs (For Example: See Figure 1).

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Allowable Subject Matter

5. Claims 53-56 are allowed.

Response to Arguments

6. Applicant's arguments filed October 20, 2003 have been fully considered but they are not persuasive. Applicant argues that the prior art fails to teach "at least one support region having a local interconnect formed therein, where at least one wordline and said interconnect are comprised of identical material." However, Bronner et al. discloses where the wordline and said interconnect are comprised of identical material (For Example: See Column 3 Lines 44-67).

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monica Lewis whose telephone number is 571-272-1838.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amir Zarabian can be reached on 571-272-1852. The fax phone number for the organization where this application or proceeding is assigned is 703-308-7722 for regular and after final communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

ML

January 12, 2004



Mary Wilczewski
Primary Examiner